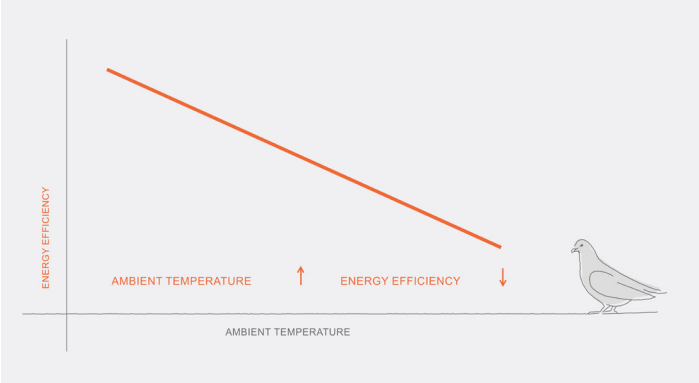
Finding Climate Friendly Ways To Cool Down

The PRAHA project: Promoting Low-GWP (global warming potential) Refrigerants for Air Conditioning Sectors in High Ambient Temperature Countries

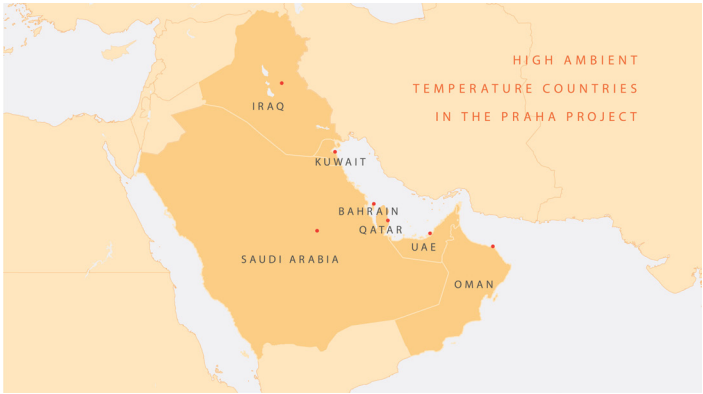
In countries with high ambient temperatures, residential air-conditioning is not a luxury; it is a necessity. Gulf countries share around 15 per cent of the global market for air conditioning, and present a special challenge for the phase out of ozone depleting substances. This is because in order to phase out hydrochlorofluorocarbons (HCFCs), which damage the ozone, an alternative must be found, and currently the main alternatives are potent greenhouse gases. The challenge of the PRAHA project is to find alternatives that are not only efficient, but also gentle on the climate.

In high ambient temperatures, air conditioners do not last or perform as well as they do in cooler countries. This is because of the additional stress on the equipment to bridge the gap between cool indoor and high outdoor air temperatures. Leakage and energy efficiency are both significant problems. While leakage can be solved with increased training, efficiency remains a technical challenge.



High ambient conditions lead to low energy efficiency

In 2013, the PRAHA project was approved by the Executive Committee of the Multilateral Fund, with UNIDO and UNEP as implementing agencies. The project intended to investigate alternative refrigerants which are gentle on the climate.



High ambient temperature countries in the PRAHA Project

New ways to cool down: PRAHA I

By building prototypes and **testing various alternatives**, it became clear that a full product redesign would be necessary, and the appropriate components would need to be developed and made commercially available. Thanks to **international conferences and study tours** in China and Japan, participants have gained familiarity with alternative technologies.

Achievements and challenges during PRAHA's first phase included:

Achievements
• 6 local original equipment manufacturers built **14 prototypes with 5 refrigerant alternatives** and shipped 9 base units for comparison • Selected alternative refrigerants **showed promising results** • Commercial and technical obstacles were identified for **smooth technology transfer**
Challenges
• Energy efficiency of various alternatives • Availability of components and technology • Intellectual property rights and patent issues

Wang Lei, Vice President, Chinese Household Electrical Appliances Association (CHEAA)

Coming up in PRAHA II

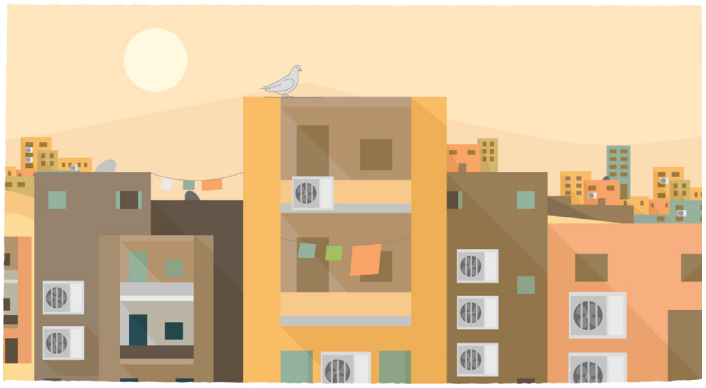
- Design optimization of PRAHA prototypes
- Capacity building of original equipment manufacturers
- Risk assessment for high ambient temperature countries
- Maintaining PRAHA platform

All part of the process: PRAHA

PRAHA has become a committed, ongoing process. PRAHA I triggered a number of new international studies, as well as the **second step, PRAHA II**. The beneficiary countries, together with UNIDO and UNEP, are continuing to work towards a solution.

To learn more about the PRAHA project, please visit http://www.unido.org/environment/praha.html

Watch our video at UNIDO's YouTube channel, https://goo.gl/A79CXI



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